BIOLAN®

BIOLAN NATURUM

Instructions for installation, use and maintenance

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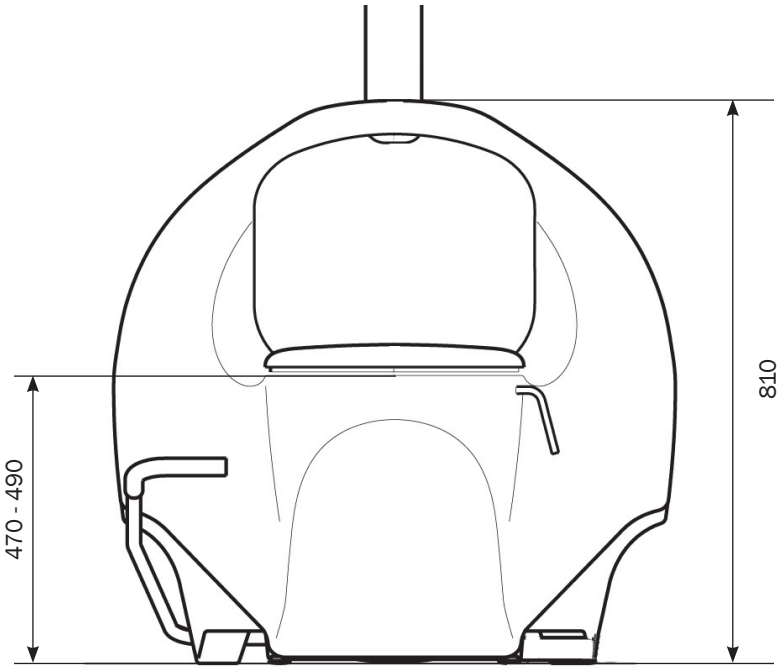

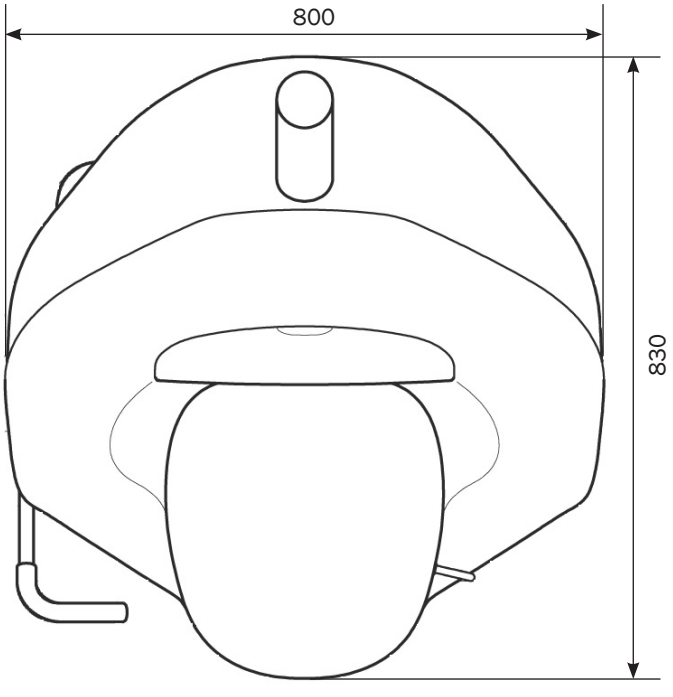

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BIOLAN NATURUM

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The Biolan Naturum is a toilet unit designed for one family and to be placed simply on the floor. The Naturum shall be located in a warm space. The toilet is intended for households of 1-5 people. The Naturum's operation is based on the composting of solid waste and separation of liquid in the toilet seat. The toilet requires neither water nor electricity supply. The drainage pipe from the toilet is connected to the sewer for collection or treatment of urine and washing water.

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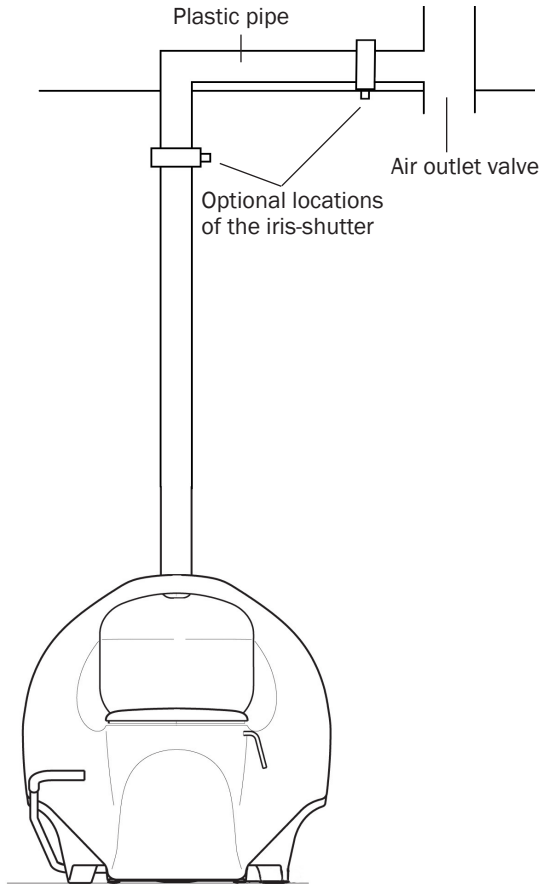
Dimensions

length	84 cm
width	74 cm
height	81 cm
sitting height	47 - 49 cm
weight	about 34 kg
size of the inner receptacle	7 litres
composting volume	30 litres
external diameter of the ventilation pipe	75 mm
external diameter of the drain pipe	32 mm

Component list

Component	Denomination	Part number	Material
1	seat	18700904	PE
2	toilet bowl	18719001	PP
3	emptying door, assembled	17719901	PMMA + ABS
4	front jacket	17719010	PMMA + ABS
5	separating flap	18719002	PMMA + ABS
6	separating flap shaft	21719001	RST
7	separating flap spring	20719001	RST
8	separating flap bracket	21719002	ST Zn
9	handle connector	21719903	RST
10	handle	21719003	RST
11	adjustable support, upper part	20080024	PP
12	adjustable support, lower part	20080025	PP
13	drum cover	17719020	PE + PU
14	inner part of drum cover	17719030	PE
15	drum	17719940	PE + PU
16	hold wire	20719910	ST + PP
17	draw wire	20719920	ST + PP
18	holding spring	20719002	RST
19	draw spring, assembled	20719930	RST + PE + EVA
20	drain pipe	28719010	PE
21	drain trap	28719920	PP + PE + RST
22	emptying receptacle + lid	16719920	PE + ST + PP
23	service rake	21574020	RST
24	set of drum wheels, right	21719920	ST Zn + PP
25	set of drum wheels, left	21719910	ST Zn + PP
26	drum bearing	29719010	RST
27	drum bearing cup	29719020	ST Zn
28	upper body	21719020	ST Zn
29	upper drum cover support	21719005	ST Zn
30	lower body	21719010	ST Zn
31	pedal	21719030	ST
32	pedal cover	19719010	EPDM
33	pedal padding	19719020	EPDM
34	pedal cap	19557103	PP
35	side support of drum cover, 2 pcs.	21719006	ST Zn
36	rear jacket	17719050	PMMA + ABS
37	bearing nut 36 mm	20020017	ST
38	sheet metal nut M4, 7 pcs.	20020018	ST Zn
39	conical washer 15x7 A2, 7 pcs.	20050005	RST
40	crosshead screw M4x20 A2, 7 pcs.	20040031	RST
41	adjusting shoe, 2 pcs.	20557102	PP + RST
42	adjustable shoe M8x34x20, 2 pcs.	20080026	PP + RST
43	replacement air valve	18780260	PP
44	lead-through rubber 75 mm	18001010	EPDM
45	ventilation pipe 750 mm, 3 pcs.	28704035	PP
46	connector sleeve of ventilation pipe	28575030	PP
47	pipe bracket, white	18704055	PP
48	flexible ventilation pipe, white	19704025	PP + ST
	In addition to the components illustrated in the components picture, the package includes:		
	drum gasket 640 mm	19719030	EPDM
	drum gasket 190 mm	19709035	EPDM
	drum gasket 95 mm	19709040	EPDM
	chipboard screw 5x20 A2	20703120	RST
	fender washer A2 M6	20060003	RST
	drum brush 270 mm	20080027	AL + PP
	drum brush 170 mm	20080028	AL + PP
	quick reference instruction plate	27576004	PAPER
	user manual Finnish/Swedish	27719010	PAPER
	user manual in 10 languages (export products only)	27719020	PAPER
	first charge	70562400	PACKAGE: PE



Installation example. The picture is indicative only

Spare parts sales: dealers and the Biolan online shop at www.biolan.fi

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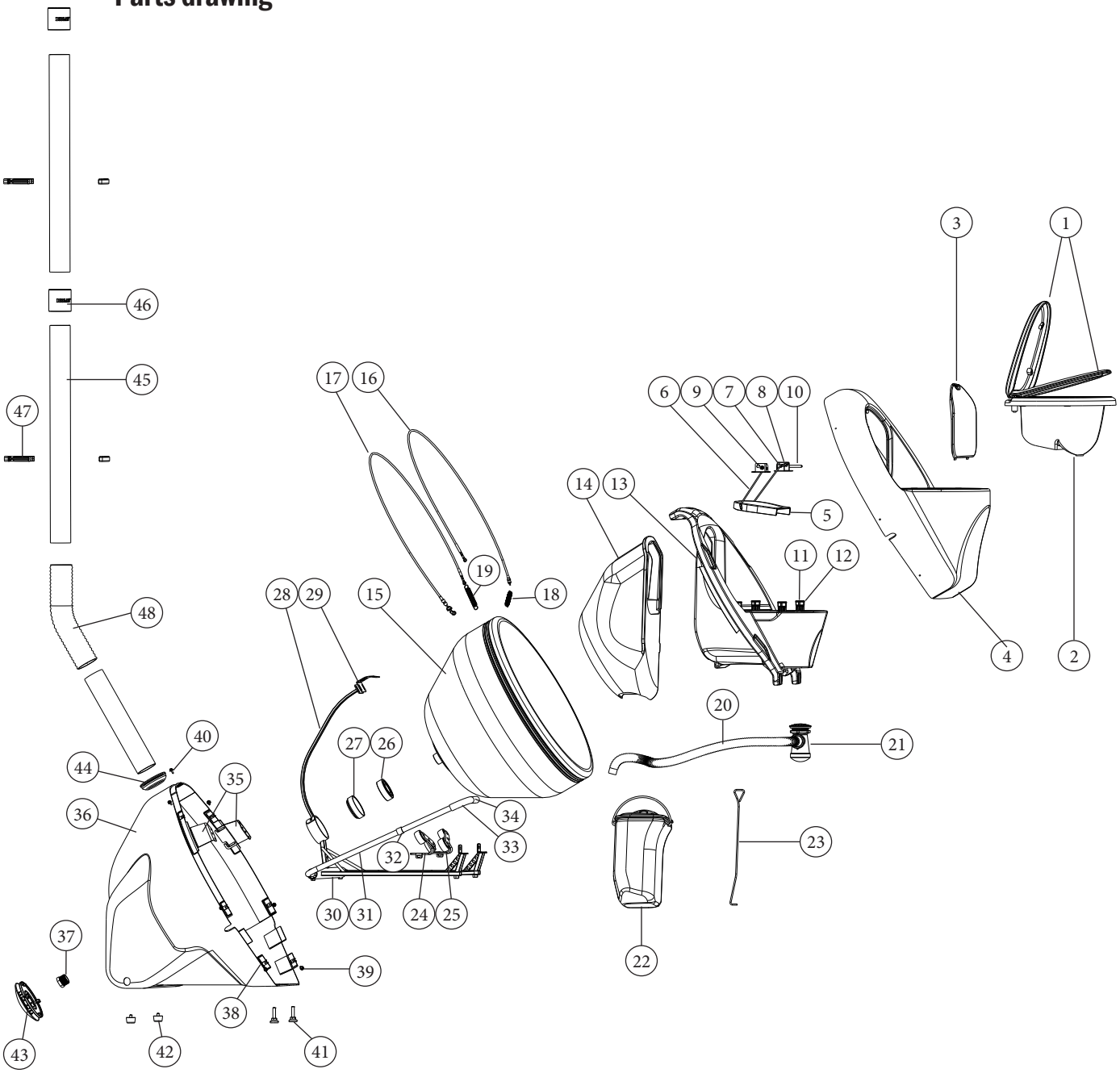
Parts drawing



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How wide must the doorway be to enable the Naturum to be taken in?

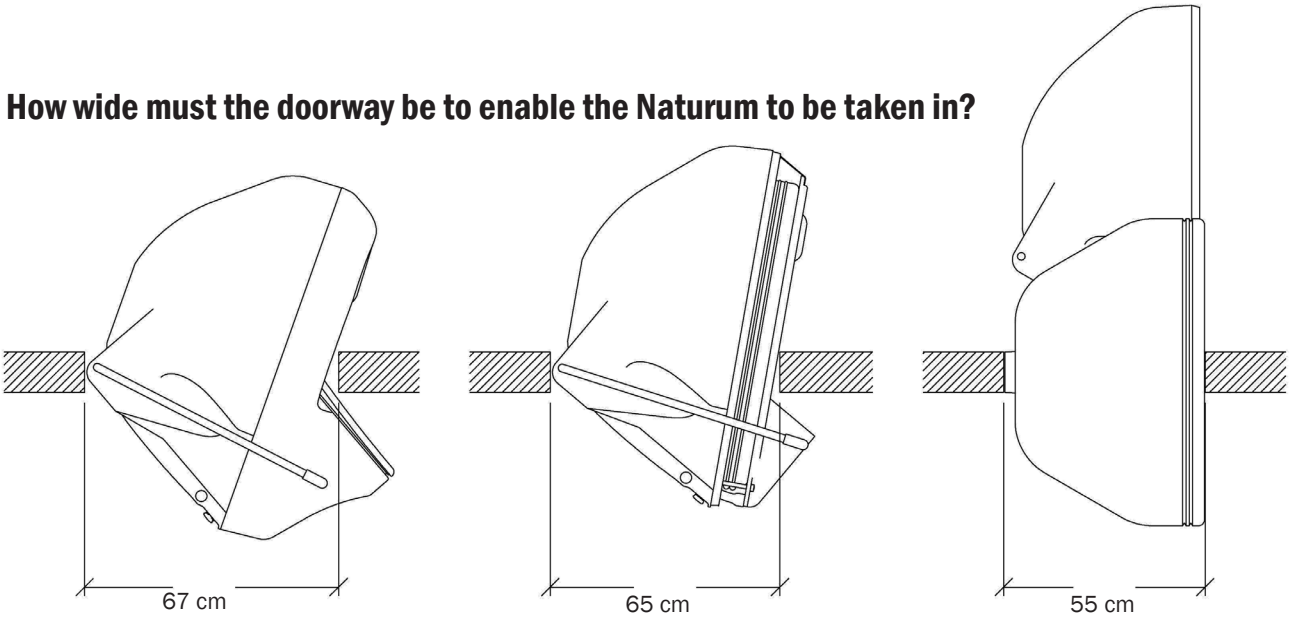

Fig. 1

1. Planning and installation

Install the Biolan Naturum at a level position on the floor. Do not attach the toilet unit to the floor. Finely adjust the position using the adjustable shoes under the unit's front edge.

The toilet unit is equipped with connectors for drainage and ventilation. When designing, observe explicitly whether the liquid needs to be gathered into a collecting tank or a treatment facility, the ventilation of the sewer, and the thermal insulation of the ventilation and drain systems in cold spaces.

The method for post-treating the solid waste should also be carefully planned, to enable easier servicing of the unit.

1.1 Space requirement of the toilet

When planning the location for the Naturum toilet, make sure to reserve sufficient space for its operation and maintenance as well as for routing of the ventilation pipe and drained liquids The recommended minimum floor area required for installation of the unit perpendicular to the wall is 80 cm x 140 cm, but if set at an angle in a corner, 130 cm x 130 cm.

1.1.1 Taking through the doorway

It is possible to take the Naturum through a doorway at least 67-cm wide without dismantling, provided that it is first turned onto its side. With its front jacket removed, the unit can be taken through a 65-cm wide doorway or, if disassembled into two parts, even through a 55-cm wide doorway (Fig.1).

1.1.2 Removal of the front jacket

- Undo the 7 attachment screws of the jacket.
- Remove the lever from the separating flap by pulling the lever straight off the unit.
- Depress the pedal, and pull off the jacket. Reassemble in the reverse order.

1.1.3 Disassembling into two parts

- Remove the front jacket, as described above.
- Loosen the screws of the drum's side supports.
- Remove the screws of the upper drum cover support.
- Disconnect the liquid removal pipe from the drain trap.
- Undo the lower bolts of the drum cover (Fig. 2).
- Detach the hold and draw springs (Figs. 3 and 4).
- Pull the wires out from their groove.
- Starting from the lower part, twist off the drum cover from its place (Fig. 5).
- Lift the drum off the bearing.
- Reassemble in the reverse order.
- Finally, tighten the drum bearing under the rear air vent at the rear of the unit (Fig. 6). The rear air vent can be removed by turning (Fig. 7).

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1.2 Planning and installing the ventilation system for the toilet

1.2.1 Joining up the ventilation pipe

Join up the ventilation pipe in accordance with the parts drawing (see page EN-5). Cut the pipe to be connected to the unit by sawing it to the correct length so that the ventilation pipe succeeding the flexible pipe goes upright along the wall.

1.2.2 Natural ventilation

Route the ventilation pipe from the Naturum as a separate line straight above the roof. You can also connect the ventilation pipe to the sewer ventilation or to an unused chimney flue. So as not to disturb the circulation of air, do not install the Naturum close to a fireplace in active use. We recommend always using the Exhaust Ventilator (see Accessories on page EN-10) in connection with indoor installations. This ensures that the air always flows in the correct direction irrespective of the prevailing weather conditions. Locate the Exhaust Ventilator instead of the lower connector sleeve (part 46).

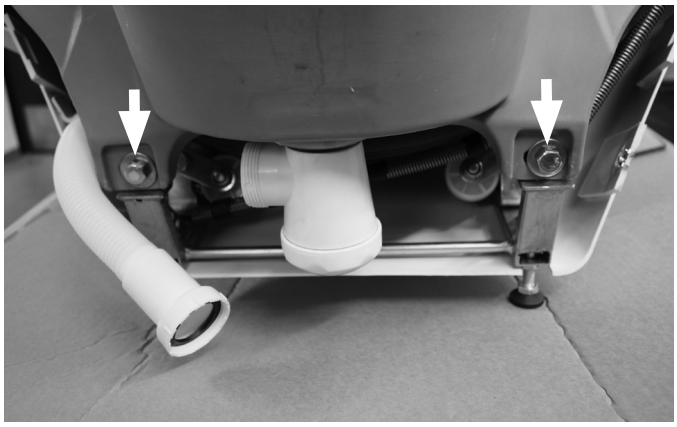

Fig. 2

Fig. 3: hold spring

Fig. 4: draw spring

Fig. 5

Fig. 6

Fig. 7

1.2.3 Mechanical extract ventilation

If the property is equipped with mechanical extract ventilation system, connect the Naturum to the air-exchange channel (see p. 4). Restrict the airflow to 1-2 litres per second to prevent the Naturum from becoming too dry. This can be achieved using, for example, an iris-shutter (works like the aperture control of a camera). Do not use a separate fan.

When connecting the Naturum to a mechanical extract ventilation system, do not provide it with a separate exhaust air duct, because the mechanical extract ventilation overrides the Naturum's own system.

1.2.4 Mechanical supply and extract ventilation (heat recovery system)

Because the air exchange is almost in balance, the most recommendable solution is to connect the Naturum to a ventilation channel of its own (refer to the point Natural ventilation). Boost the ventilation by means of the Exhaust Ventilator (see Accessories on page EN-10). Make sure that there is sufficient replacement air supplied to the toilet space either by the replacement air vent or from under the door from the living space.

As the outlet air from the Naturum is not clean (compared, e.g, with the kitchen), we do not recommend connecting the unit to a mechanical supply and extract ventilation system. For whatever reason, should you wish to connect the Naturum to the extract channel, restrict the airflow to 1-2 l.p.s., for example, by means of an iris-shutter (see page EN-2).

1.2.5 In general

We recommend that plastic ventilation channels be used for dry toilets.

The pipe should be of plastic at least all the way to the iris-shutter or the air outlet valve.This way, the metal pipe is protected against the corrosive compounds (acids or alkali) that evaporate from the Naturum in small amounts. When the iris-shutter is used, the moist air rising from the Naturum is condensed at the shutter. To drain any condensed water, install the air pipe so that it slopes from the shutter towards the toilet unit.

⚠ In new buildings, the planning of the dry toilet system constitutes a part of the general HVAC planning, and building permission shall be gained by submitting a relevant plan to the local building supervision authority in the municipality where the property is situated.
For older properties the permission procedure depends on the extent of the renovation work required and normal practice in the municipality where the property is situated. Consult the local building supervision authority for details.
When locating the toilet in an existing room space, advance planning is even more vital. It is recommended that the plan be drawn up by a professional so as to ensure the overall functionality of the system.

EN

1.3 Planning and installing the drainage system for the toilet

Drain the liquid in a closed tank for later use, treat it together with other wastewater from the property, or take it to the wastewater treatment plant. When dimensioning the liquid tank and deciding where to locate it, you need to take into account that the daily amount of liquid from the separating toilet is 1-1,5 litres per user. In addition to plain urine, take also into account in dimensioning the amount of washing water used.

The drain hose is connected to the rear of the unit at 8.5 cm from the floor. The drain hose is flexible, so you can move it sideways. The liquid must flow without obstruction all the way to the drain. Depending on the installation location, accomplish the lead-through either as a sewer, or as a pipe leading through the wall or the floor. The diameter of the toilet unit's drain hose is 32 mm. Route the liquid forward from the unit through a pipe joined up from sewer pipe parts of at least 50 cm in diameter. Buy parts for the connections at the plumbing supply store.

You can use the facility reserved for the sewer pipe of a WC for draining liquids from the Naturum. The sewer may be located as recommended/required for a WC. Connect an angular fitting of 90 degrees to Naturum's 32-mm drain hose, connect this to a 32-50 reducer, and further to a 50-110 reducer.

Typical slurry tanks and closed tanks are the most suitable for urine. These are available in various sizes and their most common material is rotationally moulded polyethylene or glass-fibre (polyester) laminate. A 30-litre canister located under the floor is in most cases sufficient for summerhouses, as this is sufficiently light to carry into the forest or to spread its contents on the plants.

In year-round use, 3 cubic metres, i.e. 3000 litres should be considered as the minimum volume for a family of four. Then the tank that is used with Naturum must be emptied on average once a year. The tank should be fitted with a Ø200 mm pipe, which is extended by 50-70 cm above the ground surface. The pipe shall be closed with a threaded cover equipped with a rubber gasket.

It is recommended to branch a ventilation pipe from the pipe routed into the tank to a place, where the possible smell of urine causes the least nuisance.

Liquids rich in nutrients must not be allowed to enter the soil as they cause an excessively concentrated nutrient load.

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2. Use and maintenance of the Naturum

Use and maintain the Naturum in accordance with the instructions. This makes the use and maintenance of the toilet more pleasant. When using the unit for the first few times, verify that your own seating distance and habits are suitable for it. Also instruct your guests on how the toilet should be used.

The Naturum is intended for composting all types of toilet waste, including toilet paper.

But do not put into the toilet anything that could hamper post-treatment of the toilet waste, such as:

- debris, sanitary towels
- chemicals, lime
- detergents, washing water
- ash, cigarette butts, matches

2.1 Before use

Remove the protective plastic from around the product. Note that the separating flap (part 5) is also covered with plastic.

Before starting to use, empty a part of the first charge bag into the toilet. A suitable amount of first charge is about 20 litres. Dose the moist first charge mass through the seat opening into the drum while simultaneously rotating the drum using the pedal. Moisten the mass in advance in a separate vessel. The humidity of the mass is suitable if a few drops of water can be squeezed from it when clenched in the hand.

Use the rest of the first charge bag as bedding; 1 litre/user/week. The first charge is a blend of peat and compost soil. The product matching the first charge is Biolan Peat Soil. (see Accessories on page EN-10) As required, you can use Biolan Peat Soil as the first charge.

2.2 Using the toilet

You can use the Naturum in either a standing or a sitting position.

- with the separating flap in the closed position, you can urinate into the Naturum either standing or sitting, or wash the toilet bowl using the hand shower. This way the liquid is drained to the sewer and does not end up in the composting drum
- open the flap and drop the paper into the composting drum even after urination.
- before sitting for defecation, open the separating flap that closes the drum by turning the operating lever (part 10).
- after use, depress the pedal a few times to transfer the deposit and the paper out of sight and flush the liquid bowl with a small amount of water.

2.3 If the toilet is not used year-round

Installed in a cold space, the toilet can freeze during winter. The toilet unit is manufactured of frost-proof polyethylene, so freezing does not damage it. During a period of persistent frost, the compost mass in the Naturum can freeze and can no longer be turned in the composting drum. In this case, use of the unit should be temporarily suspended.

As the temperature rises, the mass soon melts and use of the Naturum can be resumed as soon as the mass again collapses on top of the waste when the drum is rotated. If the liquid is collected in a tank susceptible to frost, empty the tank in the autumn in order to avoid damage caused by freezing of the liquid.

2.4 Using the bulking material

Applying suitable bulking material regularly is essential for proper operation of the toilet. As bulking material we recommend using Biolan Ground Peat, which is non-fertilised and non-limed peat, or the granulated Naturum Bulking Material. Do not use Biolan Compost and Toilet Bulking Material (or equivalent) in the Naturum, as it contains coarse bark.

Add bulking material once a week. The amount of Biolan Ground Peat to be used is one litre per user per week, and the amount of Naturum Bulking Material is half a litre per week per user. Dose the bulking material through the seat opening by simultaneously rotating the drum via the pedal.

Moisten the peat before putting it into the drum. The humidity of the peat is suitable if, when clenched in the hand, a few drops of water are squeezed from it. Dry peat repels liquid and does not absorb it. The Naturum Bulking Material should be added as dry, but if the compost mass also is dry, it can be moistened.

2.5 Using the service rake

Remove any mass stuck to the edges of the drum through the emptying door, using the service rake. Rotate the drum simultaneously. During regular use, do this once a week and always after breaks in operation. If the mass has dried out, add some moist bulking material to it while you rotate the drum.

2.6 Emptying the inner receptacle

Empty the emptying receptacle as soon as it fills up. The emptying intervals of the receptacle depend on how frequently the toilet is being used.

- open the door in the seat
- cover the emptying receptacle with its lid and pull it out
- empty the receptacle for post-composting
- return the receptacle to its place

It is not necessary to wash the emptying receptacle on the inside every time the receptacle is emptied.

During use, the emptying receptacle stands open without the cover inside the toilet unit. Keep the lid someplace other than next to the receptacle as it may end up under the receptacle, and shift the receptacle into the wrong position. Refer to page EN-11 for instructions about composting the solid waste from the toilet.

2.7 Emptying the liquid tank

Empty the liquid tank, if necessary. You can have a large tank emptied by means of a gully emptier, a suction tank mounted on a tractor trailer, or by pumping. The emptying intervals are determined by the size of the liquid tank and by how often the toilet is being used. One person produces 1-1.5 litres of urine daily. More about the utilisation of urine on page EN-11.

For emptying by pumping, thread a small submersible pump in through the emptying pipe, and apply the urine-water mixture directly onto the spreading area. The output of the pump should preferably exceed 500 W so that it could power a sprinkler, for example, and so that the emptying does not take too long. It pays to empty the tank when it is raining (however, not in torrential rain). Then you will get the dilute water "free".

2.8 Cleaning the Naturum

Wash and clean the toilet, as necessary. You can use any commonly available domestic cleaning agent. Avoid using scrubbing agents and tools. You can dismantle the toilet bowl and the separating flap to enable proper cleaning of the unit.

Wash the liquid bowl and the drain pipe with warm water and mild detergent, and in addition at least once a year, with crystallised sodium to remove any precipitate that has been formed by the urine. If necessary, clean also the drain trap with water/crystallised sodium dilution. You can purchase crystallised sodium, for example, in building material stores.

2.9 Replacing the draw wire

To change the draw wire, open the front jacket (see point 11.2). One end of the draw wire is attached to the pedal, and the other end as shown in Fig. 4. The draw wire goes in the rear groove. Clean the wire and the groove from greasy dirt with acetone.

2.10 Tightening the draw wire

The other end of the wire is adjustable (Fig. 9), and can be tightened as necessary.

3. What happens in the Naturum, and how does it work?

Composting of solid waste

A Solid waste drops into the drum through the seat opening.

B The drum is rotated using the pedal in order to cover the fresh waste with the compost mass and to avoid creating any odour.

C The compost is mixed by rotating the drum.

D The mass gradually drops through the opening in the division wall into the emptying receptacle.

E The composting process continues in the emptying receptacle (part 22).

Liquids

F Urine and washing water are separated as "clean" and drained out of the unit.

Ventilation

G The ventilation pipe is routed to the roof.

Operation of the drum

The pedal (part 18) is fixed to the draw wire (part 17), which turns the drum around: counter-clockwise viewed from the front. As the pedal is released, the wire returns to its initial position. The hold wire (part 16) keeps the drum in position, preventing it from turning back. The other ends of the wires are fixed to the draw and hold springs (parts 19, 18).

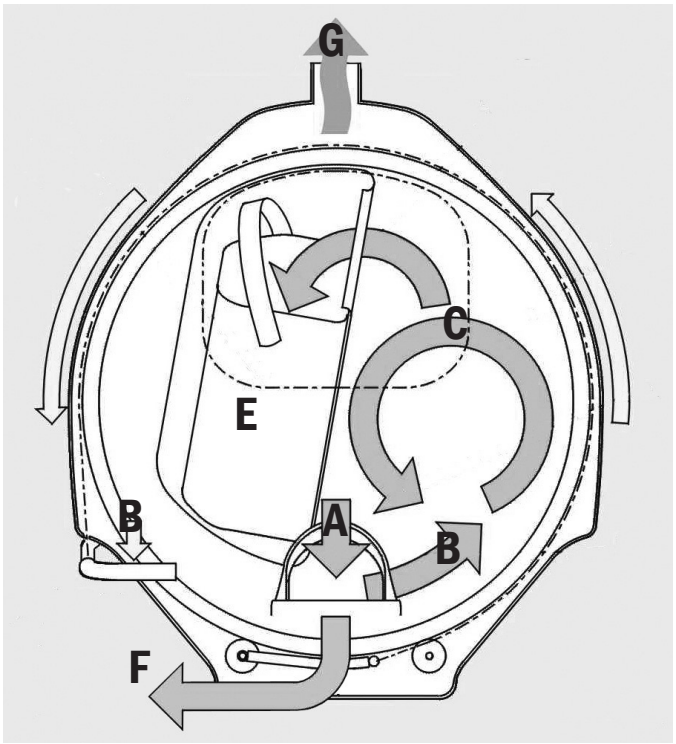

Fig. 8

Fig. 9 Adjusting the wire Adjustment under heat shrink tubing (upper picture) Heat shrink tubing removed (lower picture)

4. Problems that may occur

4.1. Odour

If odour problems occur:

- check that there is no liquid on the bottom of the drum. If there is some liquid, ensure that all users of the toilet have understood the operation and purpose of the flap. Add bulking material to absorb the excess liquid.
- check that the ventilation of the toilet is operational. Natural ventilation: make sure that the ventilation pipe routed from the toilet unit to the roof, is straight and extends above the roof ridge. If the ventilation pipe is not straight or does not extend above the roof ridge, you can repair the installation or improve the ventilation by installing a separate Exhaust Ventilator (see Accessories on page 6). If the property is equipped with mechanical extract ventilation, the Naturum is connected to this system (see point 1.2.3).
- any devices that affect the pressure of the inside air, such as a fireplace or a roof or stove extract fan, may impair the natural ventilation by causing vacuum inside the Naturum. To avoid this, ensure a sufficient supply of replacement air so that the replacement air is never routed via the Naturum.

4.2. Condensed water

If water leaks from the ventilation pipe to the toilet:

- check that the ventilation pipe of the toilet is properly insulated in the cold space. If the pipe is not insulated, insulate it later, if necessary. Add dry bulking material into the unit, and mix it using the service rake. Simultaneously, depress the pedal (part 31).

4.3. Mass is moist

Moist mass hinders the motion of the drum, and the mass may slide.

- check that the ventilation pipe of the toilet is properly insulated in the cold space. If the pipe is not insulated, insulate it.
- ensure that there is nothing under the separating flap that might prevent it from closing properly. Remove and wash the valve as required.
- ensure that all users of the toilet have understood the operation and purpose of the flap. Add dry bulking material into the unit, and mix it using the service rake. Simultaneously, depress the pedal (part 31).

4.4. The mass slides, i.e. does not move with the drum

If the mass slides inside the drum, it is too wet.

- see point 4.3

4.5. The mass forms a heap inside the drum

Have you added too much bulking material at one time?

It is normal that, when bulking material is added, the mass heaps up for a while inside the drum. As required, push the mass down using the service rake (part 23), and depress the pedal (part 31).

4.6. The mass clods

If the mass clods or is difficult to turn around, it is too dry.

- rake the entire compost drum using the service rake (part 23), and add some moist bulking material.

4.7. The mass does not rise into the emptying drum

If the mass does not rise into the emptying drum, it is too dry.

- Moisten the mass either by adding water through the seat opening or add some moist bulking material. As necessary, mix the moist mass with the rest of the mass using the service rake, and simultaneously depressing the pedal.

4.8 The pedal feels stiff

If the pedal appears stiffer than normally:

- check whether the emptying receptacle is full; if it is, then it must be emptied
- check that the mass is suitably moist (see point 4.3)

4.9 The pedal feels loose

If the pedal starts to feel loose, and the drum does not rotate:

- open the front jacket. Check whether the draw wire has come loose from the pedal or is cut off. Reconnect or replace, as necessary.
- Check whether the draw spring on the wire has come loose or is cut off. Reconnect or replace, as necessary.
- the draw wire is the one in the rear groove, which, viewed from the front, is attached to the spring on the left-hand side (Fig. 4).

If the wires and the springs are in order, but the pedal does not rise, or it rises too slowly, the wire has unwound.

- turn the draw wire once around the rear way, clockwise viewed from the side, and after that reconnect it to the pedal.

4.10 The wires slide

If the wire slides in its groove, and the drum does not rotate properly.

- Clean the groove from dirt and grease. You can use acetone for this. Be careful not to spill it on the glass-fibre parts.
- If cleaning does not help, remove the heat shrink from the end of the wire, and tighten the wire (see Fig. 8). The other end of both wires is adjustable.

4.11 Some liquid leaks on the floor

Any liquid ending up in the drum may leak onto the floor from under the jacket at the front edge of the unit:

- check that the drain trap is not blocked. As necessary, clean it with crystallised sodium and warm water.
- check that all users of the unit have understood the significance of the separating flap. Add bulking material to absorb the excess liquid.

4.12 Insects

If the toilet unit is infested with, for example, flies:

- empty the emptying receptacle into a compost and then wash it.
- do away with any flying insects in the toilet space using pyrethrin-based spray. Repeat the treatment daily until flying insects no longer can be spotted. Repeat the cure immediately, if insects reappear in the space
- aside from the spray, also use an insecticide that shall be mixed with water Make a mixture of half a litre of the insecticide, and mix it with the mass. The liquid pesticide can also be mixed with the peat bedding. The treatment shall be repeated once a week until the insects no longer appear.
- consult your local garden centre to select a suitable pyrethrin-based product.
- start using granulated Naturum Bulking Material instead of Biolan Peat,
- check that when natural ventilation is applied, the ventilation pipe is routed from the toilet unit straight to the roof, and that it extends above the roof ridge. If the ventilation pipe is not straight or does not extend above the roof ridge, you can repair the installation or improve the ventilation by installing a separate Exhaust Ventilator (see Accessories on page EN-10).

Soil dwelling mites are the decomposers in the compost, They very rarely want to leave the compost. If they run out of nutrition, they may leave the compost, and appear as fine light dust on the floor.

Control with a pyrethrin-based spray insecticide and vacuum out. The control must be performed several times in series within 2-3 weeks, at intervals of a few days.

5. Post-composting the toilet waste

The compost emptied from the Biolan Naturum is partially mature. Post-composting is always recommended for the compost. If the compost is to be used for vegetable plots or for edible plants, post-compost it for about a year in order to exterminate the microbes in the compost mass.

You can compost the toilet waste together with garden waste and domestic bio-waste. While composting, make sure to observe the local regulations on waste handling and consider sufficient protective distances to neighbours, wells and nearby bodies of water.

Organise the composting so that no liquids seep from the compost into the soil. The Biolan Garden Composter or the Biolan Biolan Stone Composter (see Accessories on page EN-10) are suited to the purpose.

The micro-organisms in the compost decompose organic matter under aerobic conditions. After the composting has continued for 1-3 years, the result will be compost soil. To ensure that the composting is as efficient as possible, provide the waste-decomposing micro-organisms with favourable living conditions. The basic requirements for compost are the presence of oxygen, moisture and nutrients.

The micro-organisms in the compost live in a humid environment, so the compost must be suitably moist. Therefore, dampen the compost with water or separated urine, which also provides the compost with a good source of nitrogen supplement. To ensure that the compost is sufficiently airy, use coarse bulking material or branch chaff in layers among the waste. Compost that is too tightly packed or too wet is anaerobic and starts to rot and smell.

After the addition of toilet waste or liquid, carefully cover the surface of the compost with bulking material, garden waste or peat. When composting, follow the instructions for the composter that you are using. Toilet waste, composted with care, makes excellent soil conditioner for perennial plants, shrubs, trees and a vegetable plot.

6. Utilisation of liquid

You can use the separated liquid as nitrogen fertiliser as such or diluted with water, for example, for lawns, ornamental bushes and perennial plants. In the spring, in connection with the initial fertilisation, it can also be used for a vegetable plot. During the growing season urine should not be applied directly to edible plants. The recommended storage time for urine is about 2-3 months before it should be used in the garden. Do not apply urine to plants in the autumn, in order to avoid disturbing the perennials' preparation for winter.

A safe dilution ratio is 1:5, which means one litre is diluted with five litres of water.

You can use also undiluted urine, but the area must then be carefully watered after the application to avoid early blight. Carry out the application when it is cloudy, either early in the morning or late in the evening, when the evaporation of nitrogen and odour-related problems are at a minimum. During the growing season, you can apply 1-1,5 l/m² undiluted urine in a kitchen garden.

Please consult your local waste advisor or the secretary for environmental affairs in your municipality for regulations on composting.
Visit www.biolan.fi for more information on composting and the utilisation of urine.

Disposal of the product

The raw materials used are presented in the list (see page 4). Dispose of each part as prescribed. Always follow the regional and collecting-point-specific instructions.

To energy-from-waste process or recycling of plastic:

EPDM = ethylene propylene

PE = polyethylene

PP = polypropylene

To energy-from-waste process:

PU = polyurethane

To collection of metal:

RST = stainless steel

ST Zn = hot-galvanised steel

To recycling of paper

Paper

Biolan accessories

Biolan Biowaste Bag 40
A biodegradable bag to be placed in the inner receptacle of the toilet, which can be composted. Capacity about 40 litres Roll of 30 bags.

Product number: 707722001

Biolan Peat

Biolan Peat is clean, white non-fertilised or limed sphagnum peat. It is naturally sour. Biolan Peat is suitable for, for example, storing root crop, use as soil conditioner, and use in an evaporating pan for seep liquid or as bedding.

Package size: a bag of 70 litres

Product number: 55544200

Biolan PeatSoil

Biolan PeatSoil is a naturally fertilised mixture of compost soil and peat. It can can be used as first charge in the Biolan Naturum.

Package size: 50 litres

Product number: 55543500

Biolan Compostmixer
The Biolan Compostmixer is made of glass fibre-reinforced propene, so it neither corrodes nor oxidises even over time. The Biolan Compostmixer offers effortless mixing of the compost.

Product number: 70575200

Biolan Garden Composter

The Biolan Garden Composter is intended for the composting of domestic, garden and toilet waste in a detached house or a holiday home. Its large, hinged cover makes the filling of the composter easier. The hermetic structure and adjustable air exchange prevent the compost mass from drying, and reduce the need for maintenance.

Product number: green 70572000, grey 70576700

Biolan Stone Composter

The Biolan Stone Composter is intended for the composting of domestic and garden waste in a detached house or holiday home. Thanks to its large size, it is well-suited to the composting of garden waste and toilet waste from a summer cottage. Biolan Stone Composter having the colour of natural stone merges well with its surroundings, and is well-suited even to small yards.

Product number: red granite 70573100, grey granite 70573200

Composter Biolan 220^{eco} and 550

Biolan Composters are suitable for year-round composting of domestic, garden and toilet waste. The thermal insulation ensures that the Composter continues operating efficiently even during the cold of winter.

Composter Biolan 220^{eco}: product number: green 70579000, grey 70579200
Composter Biolan 550: product number: green 70573400, grey 70576600

Visit www.biolan.fi for the most recent product information

EN

About the guarantee

The Biolan Naturum is guaranteed for three years.

1. The guarantee is valid from the date of purchase and covers possible defects in material and workmanship. The guarantee does not cover any indirect damage.
2. Biolan Oy retains the right to decide about repairing or replacing damaged parts at its discretion.
3. Any damage resulting from careless or forcible handling of the device – from failure to observe the operating instructions, or from normal wear – will not be covered by this guarantee.

For matters related to the guarantee, please consult Biolan Oy directly.

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